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character of diatom structure than was formerly possessed. The two papers mentioned are valuable contributions to the literature of the subject. Mr. Smith's paper is accompanied by two plates, containing twenty excellent phototype illustrations.

Le Diatomiste. J. Tempére, Paris.

The fourth number of this serial, just issued, is entirely devoted to a monograph upon the genus *Pleurosigma*, by M. H. Peragallo. The article embraces sixteen pages of text, and is accompanied by five plates, containing one hundred and nine figures. A synoptical table is given, which is so concise that it is likely to afford material aid in tracing species. C. H. K.

Index to Recent Literature relating to American Botany.

Abies religiosa. (Gard. Chron. ix. 304, figs. 69, 70).

A Botanical Excursion into Lycoming and Luzerne Counties, [*Pa.*] (College Student, xi. 108-110).

An interesting account of an autumn expedition by Messrs J. K. Small and A. A. Heller, students in Franklin and Marshall College. In the list of plants collected we note the discovery of *Aster concinnus*, Willd., as of special interest.

Apodanthes—Two Undescribed Species of. B. L. Robinson. (Bot. Gaz. xvi. 82-84, Pl. ix).

Descriptions and representations of *Apondanthes Pringlei*, Watson, on branches of *Dalea frutescens* and *A. globosa*, Watson, on *Bauhinia lunarioides*, both collected by Mr. C. G. Pringle, in the Sierra Madre, near Monterey.

Bessera elegans. (Gard. and For. iv. 124, f. 24).

Black Rust of Cotton ; a Preliminary Note. George F. Atkinson. (Bot. Gaz. xvi. 61-65).

A discussion of the parts played in the above disease by *Cercospora Gossypina*, *Colletotrichium Gossypii*, *Macrosporium nigricanticum*, [n. sp.], *Phyllosticta Gossypina* and *Alternaria* sp.?

Cuscuta Glomerata with its Host—The Union of. W. C. Stevens. (Trans. Kans. Acad. Sci. xii. 163, 164, illustrated).

Erythræa Pringleana Wittr. nov. spec. Veit Wittrock. (Bot. Gaz. xvi. 85). Based on C. G. Pringle's, No. 2595.

Mr. Pringle adds the following note : " It may be well enough to state in this connection that what was distributed as '*Microcala*

n. sp.,' (No. 2598), is *Schultesia Mexicana*, Watson, n. sp., soon to be published."

Evolution in Leaves. Mrs. W. A. Kellerman. (Trans. Kans. Acad. Sci. xii. 168-173, illustrated).

This is a statement of some facts observed in the lobing of leaves and development of stipules, followed by a discussion of the significance of the facts in relation to the forms of leaves. *Rubus villosus*, *Vitis quinquefolia*, *Rhus Toxicodendron*, *Sambucus Canadensis*, *Negundo aceroides*, *Symphoricarpus racemosus* and *Cimicifuga racemosa* are made use of as examples, and *Rubus*, *Rosa*, *Tecoma* and *Vitis*, are the subjects of illustration. There is also a list of plants designed to show that large leaved plants harbor fewer insects than finely divided ones, and that, therefore, the evolution from entire to dissected leaves was not due to an attempt of the plant to escape from the ravages of insects. The author is manifestly in sympathy with the views of Grant Allen, that leaves become dissected in their efforts to obtain air and sunlight. A. H.

Flora Franciscana. Au attempt to Classify and Describe the Vascular Plants of Middle California. Edward L. Greene, (Part I, 8vo. pp. 128. San Francisco. Issued March 30, 1891).

A portion of the collected results of Prof. Greene's critical studies of the Flora of this part of Western America, extending over many years, is now, happily, given to the world. It is the first time that he has essayed to present a descriptive synopsis of the flora of a region, or anything in the nature of monographs of genera, all his available time for writing, up to the present, having been needed for the separation and characterization of new or obscure species, the discussion of questions of nomenclature, and other work of a non-consecutive character on the plants of what has been, botanically, a little known area. American botanists have awaited the production of the work now noticed, with impatience, for it has been felt that he, and he only, could satisfactorily bring together the multitude of facts and observations which he has recorded in the publications of the California Academy of Science, Pittonia and the BULLETIN. Departing entirely from the long-followed sequence of natural orders established by the elder DeCandolle, the Leguminosæ are placed first, the orders included in this part being arranged in the following sequence: Leguminosæ, Drupaceæ, Pomaceæ, Rosaceæ, Calycantheæ, Juglandeæ, Rutaceæ, Sapindaceæ, Anacardiaceæ, Celastrineæ, Rhamneæ, Tithymaloideæ, (the name antedating the equivalent Euphorbiaceæ), Polygaleæ, Lineæ, Geraniaceæ, Malvaceæ, Hypericeæ, Elatineæ, Frankeniaceæ, Caryophylleæ. It will be seen that the orders of the artificial division Apetalæ or Incompletæ, are inserted among the polypetalous, or better choripetalous orders, where their affinities naturally place them, and this is a great advantage in arrangement. Prof. Greene follows Bartling's ideas in the main, believing the Leguminosæ to be the most complex plants.

The following new species are described and new binomials proposed: *Vicia linearis* (*Lathyrus linearis*, Nutt; *V. Americana*, var. *linearis*, S. Wats. *V. sparsifolia*, Nutt. appears to be a prior name for the same plant); *Vicia Californica; Amorpha hispidula; Trifolium amœnum; Trifolium roscidum; Lupinus longipes; Lupinus nemoralis; Amygdalus fasciculata* (Torr); *Cerasus Californica* (*Prunus emarginata*, Brew. and Wats.), *Amelanchier glabra; Amelanchier pallida; Basilima Millifolium* (Torr); *Schizonotus ariæfolius* (Smith); *Potentilla biennis; Rosa Sonomensis; Rosa gratissima; Ceanothus rugosus; Euphorbia rugulosa* (Engelm); *Erodium Californicum; Flœrkea rosea* (Hartw.); *Flœrkea alba* (Hartw.); *Sidalcea secundiflora; Malvastrum Parryi; Malvastrum fasciculatum* (Nutt.); *Malvastrum orbiculatum; Malvastrum multiflorum; Tissa Clevelandi*, and four under *Alsinella*, the only pre-Linnæan generic name taken up to replace one used by Linnæus. We wish Professor Greene had accepted *Sagina.*

As to nomenclature, original specific names are of course rigidly maintained. The parenthetic citation of authors is, however, not favored, although used to some extent. Generic names used by pre-Linnæan authors and adopted by Linnæus are accredited to the old writers even as far back as Dioscorides and Pliny. This practice has appeared to us to be straining a point for history's sake and is open to criticism on the ground that the ancients did not use the names in the generic sense of Tournefort, Linnæas and others of about their time, but in most cases, at least, as mere appelations for plants. It would seem on the whole best to adopt the plan of Bentham and Hooker, not to go back of Linnæus. If it is thought desirable to refer to the ancient history of the science, that can best be treated by itself, and Professor Greene's great learning in that topic would provide him material for a most valuable and interesting volume.

How can he, in any event, safely credit a name to Dioscorides or Theophrastus? They, surely, did not originate such terms as *Astragalus* and *Sorbus*, but merely recorded what certain plants were called in their time. Some of these terms must be as old as spoken language, and probably a number of them exist on the monuments of ancient Egypt. N. L. B.

Flora of Kansas—Additions to the. B. B. Smyth. (Trans. Kans. Acad. Sci. xii. 105–119).

This is stated to be in the nature of a supplement to the catalogue of Kansas plants prepared by Prof. J. H. Carruth about fourteen years ago. The title of the paper should include the term "Subtractions from" as well as "Addition to" the flora, as the author begins with the excellent plan of eliminating 160 species which have been credited to the State but need confirmation, leaving 1,355 species, to which are to be added the 355 Anthophyta and 16 Pteridophyta included in this paper. A preliminary list of 96 mosses is also added, so that the totals for the known flora of the State now stand: Anthophyta 1,666, Pteridophyta 40, Musci 96. The nomenclature used is not up to modern standards, and we are inclined to deprecate such fine distinctions as are included under the terms "escaped," "escaping," "escaped slightly," "escaping slightly," "escaping sparingly" and "trying to escape," but localities are freely noted and the work will undoubtedly be of value to every botanical collector in Kansas. A. H.

Flowers and Insects, VI. Chas. Robertson. (Bot. Gaz. xvi. 65–71).

The flowers which are the subjects of this contribution are those of *Triosteum perfoliatum*, *Cephalanthus occidentalis*, *Lobelia spicata*, *L. leptostachys*, *L. syphilitica*, *L. cardinalis*, *L. cardinalis* ×*syphilitica*, (in which the corolla is described as "shorter and broader and the lobes shorter and firmer than in *L. cardinalis* and

. . . of a deep reddish or crimson-purple."), *Campanula Americana* and *Apocynum cannabinum.*

Fossil Wood from the Erian (Devonian) of New York and Kentucky—Note on Specimens of. Wm. Dawson and D. P. Penhallow. (Can. Rec. Sci. iv. 242–248, pl. I).

The claim is made that one of the specimens examined represents the genus *Kalymma* of Unger, not previously recognized in America. The specimens in question were found in the Genessee shales of Moreland, Ky., and were subjected to microscopic examination. *Kalymma grandis* is figured—showing transverse section of stem, natural size and enlarged sections of vascular bundles, with wood cells, parenchyma, sclerenchyma cells, etc. The other species determined are *Dadoxylon (Cordaioxylon) Clarkii*, and *D. Newberryi.* The authors incidentally discuss the relationship between the genera *Cordaites, Cordaioxylon, Dadoxylon, Araucarites, Aporoxylon* and *Palæoxylon.* A. H.

Fungi—Two New Species of Montana. J. B. Ellis and F. W. Anderson. (Bot. Gaz. xvi. 85, 86, pl. X).

Explanation and plate belonging to the description of *Spirodesmium sorisporioides* and *Aecidium Liatridis* published on p. 47 of the Gazette for Feb. 1891.

Fungous Diseases of the Grape and other Plants and their Treatment. F. Lamson-Scribner. (8vo, pp. 134, Little Silver, N. J. 1890, illustrated).

Professor Scribner has brought together accounts of several fungous diseases of grapes in this little book, written in a clear and popular style. It includes a general description of Fungi and detailed information about the Black-rot of Grapes (*Læstadia Bidwellii*); the Bitter-rot (*Greeneria fuliginea*); the Brown-rot (*Peronospora viticola*); the Powdery Mildew of the Vine (*Uncinula Ampelopsidis*); the Grape-leaf Blight (*Cladosporium viticolum*); the Root-rot (*Agaricus melleus* and *Dermatophora necatrix*); Bird's-eye Rot (*Sphaceloma Ampelinum*) and Anthracnose. Besides these grape pests there are described the Black-rot of the Apple (*Macrophoma malorum*); Apple-rust and Cedar Apples (*Gymnosporangium macropus*); Apple-scab (*Fusicladium dendriticum*); Pear-scab, caused by the same fungus; the cracking of the pear (*Entomosporium maculatum*); Plum-rot (*Monilia fructigena*); Black-Knot of the Plum and Cherry; Leaf-spot Disease of the Plum and Cherry (*Septoria Cerasina*); Powdery Mildew of the Cherry (*Podosphæra Oxyacanthæ*); Peach-leaf Curl (*Taphrina deformans*) and several others.

The work will prove an important one for fruit growers, and can be had for seventy-five cents, bound in cloth, from the J. T. Lovett Co., at the place of publication. It is well illustrated and embellished by a portrait of the handsome and distinguished author. N. L. B.

Garrya elliptica. (Garden, xxxix. 261; illustrated).

Hackberry Branch Knot—Note on the Distribution and Ravages of the. W. A. Kellerman. (Trans. Kans. Acad. Sci. xii. 101–104, illustrated.)

A description of the affliction to which *Celtis occidentalis* is so generally subject, from the attacks of a gall mite (*Phytopus*) with the assistance of the fungus *Sphærotheca phytoptophila.*

Hydrastis Canadensis—A Contribution to the Life History of. Homer Bowers. (Bot. Gaz. xvi. 73-82, pl. viii.)

List of Plants found in Cherokee County, Texas—A Partial. Mrs. A. L. Slosson. (Trans. Kans. Acad. Sci. xii. 62, 63).

A list of about 170 species, chiefly remarkable for the large number of typographical errors contained in it.

Lygodium palmatum. (Garden, xxxix. 265, illustrated).

Masdevallia macrura. (Bot. Mag. t. 7164).

Notes on North American Trees—XXV. C. S. Sargent. (Garden and Forest, iv. 147-148).

Professor Sargent concludes that the eastern Sugar Maple should bear the name *Acer barbatum*, Michx. (1803), regarding the *A. saccharum*, of Marshall (1785), as not safely referable to the tree, while the Linnæan name *A. saccharinum* (1753), belongs to the Silver Maple. It appears to us that Marshall's name can safely be attributed to the Sugar Maple, first, because it is the principal sugar-producing species, and thus the one to which the designation *saccharum* would naturally be applied by one entirely familiar with the native maples, which Linnæus evidently was not; second, because Marshall notes that " it flowers in the manner of the Red Maple," indicating the production of flowers from lateral buds, as contrasted with the Striped Maple and Mountain Maple, which produce terminal racemes ; third, because he describes the flowers as of an " herbaceous " color, and they certainly are yellowish-green ; and fourth, because it is the only one of the six species described by Marshall which can apply to the Sugar Maple, with which we think it entirely safe to assume that Marshall was well acquainted. Professor Sargent expresses his conviction that *Acer grandidentatum*, Nutt. of the Rocky Mountain region, is not specifically distinct, and that the same is true of *A. nigrum*, Michx., a position in which we do not believe he will be generally supported. He follows recent European authors in reuniting *Negundo* with *Acer*, for which there appears to be abundant reason, and refers *N. Californicum* to *A. Negundo* as a variety, which does not seem to us to be as defensible.

N. L. B.

Peronosporaceæ—First Addition to the List of Kansas. W. T. Swingle. (Trans. Kans. Acad. Sci. xii. 129-134).

Species are enumerated under the genera *Cystopus*, *Plasmopora*, *Bremia* and *Peronospora*. The host-plants are given under each species. Eleven different kinds of type are used in this article, partly in order to emphasize new facts, and the result is a somewhat startling arrangement which, however, might not attract so much attention but for its novelty. We candidly confess that to us the appearance is rather confusing than otherwise.

A. H.

Periodicity in Plants. B. B. Smyth. (Trans. Kans. Acad. Sci. xii. 75-81).

The author begins by treating the subject of annual periodicity in development, and gives examples of individual eccentricities in trees, as to date of opening the leaves, blossoming, fruiting, etc. The daily motions of plants next receive the author's attention, and from them is constructed " A Floral Clock for Kansas " which begins with " 2 to 3 A.M. . . . . . *Convolvulus sepium ;* closes next evening " and terminates with " 11 P.M. . . . . *Cereus speciosissimus ;* wilts at 2 A.M." In addition to the facts embodied in the " Clock " there are several philosophical speculations scattered through the article, such as ;

"Plants can feel, of course; but do they actually see? * * * We are not aware that we are cognizant of light by any organ except our eyes, and we call that seeing. The plant is cognizant of light in its leaves, in all their modifications. Is it not, at least, analagous to seeing? Is it heresy to say that, so far as light is concerned, plants can see?" The paper concludes with a discussion of twining and climbing plants, heliotropism, etc., and we are also told, in regard to the leaves of certain species of *Euphorbia* that "as soon as the dew begins to fall they fold together in pairs, as a child folds its hands to pray, * * * and remain thus all night." So far as the "clock" is concerned the facts embodied in it are of undoubted interest and value. A. H.

Pinus insignis. (Gard. Chron. ix. 337, f. 77 and plate).

Report of the Botanist of the California State Board of Forestry. J. G. Lemmon. Third Biennial Rep. Cal. State Board Forestry, 73-212, Sacremento, 1890).

This important paper by Prof. Lemmon is taken up mainly with an extended description of the Californian Coniferæ. It is prefaced by chapters on the general features of the group on "development the basis of classification," on "creative energy and development," and schemes of classification. The main part contains generic and specific descriptions of all the native and introduced species known to occur in California (except the pines, which were treated in a previous report), most of them illustrated by photographs taken by the author. The descriptions are drawn in a popular way, and accompanied by many interesting and valuable notes gleaned from Mr. Lemmon's long experience in investigating the western flora. The nomenclature adopted by Prof. Sargent is upheld, original specific names being maintained. Several new varieties are described.

Persons desiring the report may obtain it by enclosing 10 cents to Prof. Lemmon at 1015 Clay St., Oakland, Cal., as also copies of his preceding report on "Pines of the Pacific Slope" for the same sum. N. L. B.

Silver Maple—The. (Gard. and For. iv. 134, 135 f. 26.)

Popular description and representation of *Acer saccharinum*, or, as it is more generally known, *A. dasycarpum.*

Sorghum Smuts—Notes on. W. A. Kellerman and W. T.

Swingle. (Trans. Kans. Acad. Sci. xii. 158, 159, illustrated).

Descriptions of *Ustilago Sorghi and U. Reiliana*, the latter figured.

Vorläufige Mittheilungen über die von mir im Jahre 1888 *in Nord Amerika gesammelten neuen Arten und Varietäten der Laubmoose*, von Dr. Julius Röll. (Sep. Abd. Bot. Cent. no. 51, 1890, pp. 13).

The plants collected by Dr. Julius Röll have been named by various specialists. This installment includes twenty-three new species and twenty new varieties and sub-species of mosses named by Renauld and Cardot, Venturi, Müller, Brotherus and C. R. Barnes, the genera being *Dicranum*, *Barbula*, *Timmiella*, *Grimmia*, *Guembelia*, *Scouleria*, *Ulota*, *Orthotrichum*, *Pohlia*, *Bryum*, *Mnium*, *Myrinia*, *Pseudoleskea*, *Fontinalis*, *Neckera*, *Camptothecium*, *Brachythecium*, *Raphidostegium*, *Amblystegium*, and *Hypnum*. Suspecting *Mnium Röllii*, Vent. to be the same as *Bryum lucidum* (BULLETIN, Dec. 1889), I sent specimens of the latter to Dr. Brotherus and he confirms my suspicion. *Orthotrichum stenocarpum*, Vent. is also antedated by *O. lonchothecium*, CM. and K., Macoun's Canadian Mosses, No. 497, which I believe to be the same as Austin's *O. Macouni*, BULLETIN vi. 343, 1879. It is also worthy of note that *O. strictum*, Vent. subspec. nov. of *O. Lyellii*, is evidently only *O. Pacificum*, Hpe. which is a rigid, dark form of that species. E. G. B.

Winter Aspect of Trees. J. Walton. (Vick's Mag. xiv. 120-124; illustrated).

Fagus ferruginea, *Acer saccharum*, *Populus Canadensis* and *Robinia pseudacacia* are the subjects specifically treated. The representations of the trees are worse than poor, they are misleading and it is a pity that an article which could be made of interest and value should be spoiled by such illustrations. The previous contribution was open to the same criticism and we would suggest that hereafter the camera is the only safe instrument to use in case illustrations are desired. The author concludes with a description of how to calculate the height of trees.

Yuccas of California—The Arborescent. S. B. Parish. (Gard. and For. iv. 135, 136.)

On account of *Yucca brevifolia*, *Y. baccata* and *Y. briarfolia.*